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In the United States Patent and Trademark Office

Mailed 1999, MAY 17

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Sir:

Please file the following enclosed patent application papers:

Applicant #1, Name: Scott E. Johnston

Applicant #2, Name: \_\_\_\_\_

Title: LARGE DIAMETER SPIRALLY FORMED PIPE

☒ Specification, Claims, and Abstract: Nr. of Sheets 5

☒ Declaration: Date Signed: 5-17-99

☒ Drawing(s): Nr. of Sheets Enc.: 3 Formal: \_\_\_\_\_ Informal: \_\_\_\_\_

☒ Small Entity Declaration of Inventor(s) ☐ SED of Non-Inventor / Assignee / Licensee

☐ Assignment enclosed with cover sheet and recordal fee; please record and return.

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☒ \$ 380<sup>00</sup> for filing fee (not more than three independent claims and twenty total claims are presented).

☐ \$ \_\_\_\_\_ additional if Assignment is enclosed for recordal.

☐ Disclosure Document Program reference letter.

☒ Pursuant to 35 U.S.C. §119(e)(i), applicant(s) claim priority of Provisional Patent Application Ser. Nr. 60/085,778,  
filed MAY 18, 1998.

☒ Return Receipt Postcard Addressed to Applicant #1.

☒ **Request Under MPEP § 707.07(j):** The undersigned, a pro se applicant, respectfully requests that if the Examiner finds patentable subject matter disclosed in this application, but feels that Applicant's present claims are not entirely suitable, the Examiner draft one or more allowable claims for applicant. THANK You!

Very respectfully,

Applicant #1 Signature  
16857 Hummingbird lane  
Address (Send Correspondence Here)  
Cottonwood, CA. 96022

Applicant #2 Signature  
\_\_\_\_\_  
Address  
\_\_\_\_\_

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Inventor

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**STATEMENT CLAIMING SMALL ENTITY STATUS  
(37 CFR 1.9(f) & 1.27(b))--INDEPENDENT INVENTOR**

Docket Number (Optional)

Applicant, Patentee, or Identifier: Scott E. Johnston

Application or Patent No.: \_\_\_\_\_

Filed or Issued: \_\_\_\_\_

Title: LARGE DIAMETER SPIRALLY FORMED PIPE

As a below named inventor, I hereby state that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees to the Patent and Trademark Office described in:

- ☒ the specification filed herewith with title as listed above.  
☐ the application identified above.  
☐ the patent identified above.

I have not assigned, granted, conveyed, or licensed, and am under no obligation under contract or law to assign, grant, convey, or license, any rights in the invention to any person who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern, or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- ☒ No such person, concern, or organization exists.  
☐ Each such person, concern, or organization is listed below.

Separate statements are required from each named person, concern, or organization having rights to the invention stating their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

Scott E. Johnston

NAME OF INVENTOR

NAME OF INVENTOR

NAME OF INVENTOR

[Signature]

Signature of inventor

Signature of inventor

Signature of inventor

5-17-99

Date

Date

Date

Patent Application of  
Scott E. Johnston  
16857 Hummingbird Lane, Cottonwood, CA

## SPECIFICATION

### TITLE OF INVENTION

LARGE DIAMETER SPIRALLY FORMED PIPE

### CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims the benefit of provisional patent application No. 60/085,778

Filed May 18, 1998

### STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

Not Applicable

### REFERENCE TO MICROFICHE APPENDIX

Not Applicable

### BACKGROUND OF THE INVENTION

This invention relates to spirally formed pipe and more particularly to larger sizes than have been produced in the past.

Spirally formed pipe has been in use for the past several decades. It has been used for a variety of uses including culverts, storm drains and pile pipes. It is most often used as a round pipe product, but is also reshaped into an arch shape for use where increased water flow is required. Due to the method of manufacture and shipping requirements, the size of these products has been limited to a maximum diameter of 144 inches, and while many uses have been found for these products, it has not been considered for use in large diameter applications.

It is well known to produce various products in large diameter round and arched shapes, from bolted or welded together sections of material. The variety of uses includes metal buildings, grain silos, water and gas storage tanks, underpasses, and culverts.

While these products have been well accepted, they do require a crew of skilled workers, a large crane or lifting device for positioning panels, and considerable time to assemble.

A past process was considered to bring factory style spiral pipe manufacturing equipment near to the construction site to produce large diameter cylindrical homes. The round cylindrical shape has limited possibilities compared with the more traditional arched shape and has not been commercially accepted. The diameter contemplated by this past example was 15 feet, however, only a 144 inch diameter prototype structure was ever produced.

#### BRIEF SUMMARY OF THE INVENTION

With the creation of a new portable spiral pipe manufacturing machine, pending application number 09/212,048, it is now possible to produce spirally formed pipes at the location where the pipes are used, thus eliminating the limitations on size mandated by shipping requirements. Additionally, with the creation of a new large diameter arching machine, pending provisional application 60/085,777, it is now possible to reshape large diameter pipe into an arch shape.

This makes possible the use of large sized spirally formed pipes, for products that until now, have only been available in bolted or welded panel construction.

The invention is spirally formed pipe, round or reshaped into an arch shape, having a larger diameter than similar pipe produced in the past.

#### BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

FIG. 1 is a perspective view showing a variety of applications of large diameter spirally formed cylindrical products.

FIG. 2 is a schematic representation of a portion of pipe product according to the invention.

FIG. 3 is an end view taken along lines 3-3 of FIG. 2 showing a round shape.

FIG. 4 is an end view taken along lines 4-4 of FIG. 2 showing an arch shape.

FIG. 5 is a sectional view taken along lines 5-5 of FIG. 2 showing pipe wall styles.

#### DETAILED DESCRIPTION OF THE INVENTION

Referring now in detail to the drawings, the present invention large diameter spirally formed pipe has many uses as clearly shown in FIG. 1. A large diameter spirally formed pipe is

reshaped into an arch shape and used as a highway overpass 52. A roadway 74 is paved through the lower portion of 52 while the cross street 82 is paved over the earth filled area above 52.

A large diameter spirally formed pipe is reshaped into an arch shape and used as a barn or storage building 37, while the openings at either end are enclosed 38 with walls, doors and utility openings as needed. A large diameter spirally formed pipe is reshaped into an arch shape and used as a home 45, while the openings at either end are enclosed 46 with walls, doors, windows, and patios as needed. Both the home 45 and barn 37 may be used above ground, or could be installed below ground as overpass 52 illustrates. Large diameter spirally formed pipe may be placed vertically and used as a grain silo 32, with formed panels 34 to enclose the top and as a water storage tank 61, with formed panels 62 to enclose the top. These are several different embodiments of uses for large diameter spirally formed pipes as can be employed with the present invention and are merely illustrative of the various uses. Traditional uses such as highway storm drain 21 and pile pipe or shell 67 are well known uses for spirally formed pipe, while overpasses 52, storage buildings 37, homes 45, silos 32 and water tanks 61 being larger in diameter, have generally been produced from formed metal panels with bolted or welded construction.

Referring now to FIG. 2, a pipe according to the invention is generally designated 10. The pipe is composed of an elongated strip of ductile material, such as galvanized steel, which is formed into adjacent, helical convolutions. As illustrated, convolutions 14 are joined at 12. Convolutions 14 form the wall of the pipe which may be smooth, corrugated or profiled. Section view FIG. 5. illustrates the variety of pipe wall styles. The smooth wall 16 is joined by a welded seam 15, the corrugated wall 18 is joined by a conventional double lock seam 17, and the profiled wall 22 is joined by a conventional double lock seam 21. As the pipe diameter is increased the thickness of material and size of corrugation or profile is typically also increased. So then, in most cases the dimensional proportions of the smooth, corrugated and profiled wall increases as pipe size is increased, although if desired can be held to a smaller size for some applications.

The pipe 10 may be round as shown in FIG. 3 or reshaped into an arch shape as shown in FIG. 4. A pipe according to the invention is larger than 15 feet in diameter when left in the round shape, and a pipe according to the invention is larger than 144 inches in diameter if it is then reshaped into an arch shape.

Claims: I claim:

1. A spirally formed pipe, comprising an elongated strip of ductile material formed into joined, adjacent helical convolutions, having a diameter larger than 15 feet, whereby said pipe is larger than similar pipe produced in the past.
2. The pipe according to claim 1 further comprising that said convolutions form the wall of said pipe, and that said wall may be smooth, corrugated, or profiled.
3. The combination of claim 2 further including that said wall may be smooth, corrugated, or profiled with increased dimensional proportions as pipe size is increased.
4. The pipe according to claim 1 further comprising that said joined adjacent helical convolutions includes welded and or lock seam joining of said ductile material.
5. A spirally formed pipe, comprising an elongated strip of ductile material formed into joined, adjacent helical convolutions, reshaped into an arch shape, having a beginning diameter above 144 inches whereby said pipe, reshaped into said arch shape is larger than similar pipes used to produce arch shapes in the past.
6. The pipe according to claim 5 further comprising that said convolutions form the wall of said pipe, and that said wall may be smooth, corrugated, or profiled.
7. The combination of claim 6 further including that said wall may be smooth, corrugated, or profiled with increased dimensional proportions as pipe size is increased.
8. The pipe according to claim 5 further comprising that said joined adjacent helical convolutions includes welded and or lock seam joining of said ductile material.
9. A spirally formed pipe larger than 144 inches in diameter before reshaping into an arch shape.

## ABSTRACT OF THE DISCLOSURE

A large diameter spirally formed pipe, having a diameter larger than similar pipe produced in the past, whereby said pipe will be available for use to manufacture products that have been traditionally produced by other means.

This pipe is round or may be reshaped into an arch shape. As a round pipe the invention includes spirally formed pipes above 15 feet in diameter, and as a round pipe reshaped into an arch shape, the invention includes, spirally formed pipes above 144 inches in diameter before being reshaped into an arch shape.

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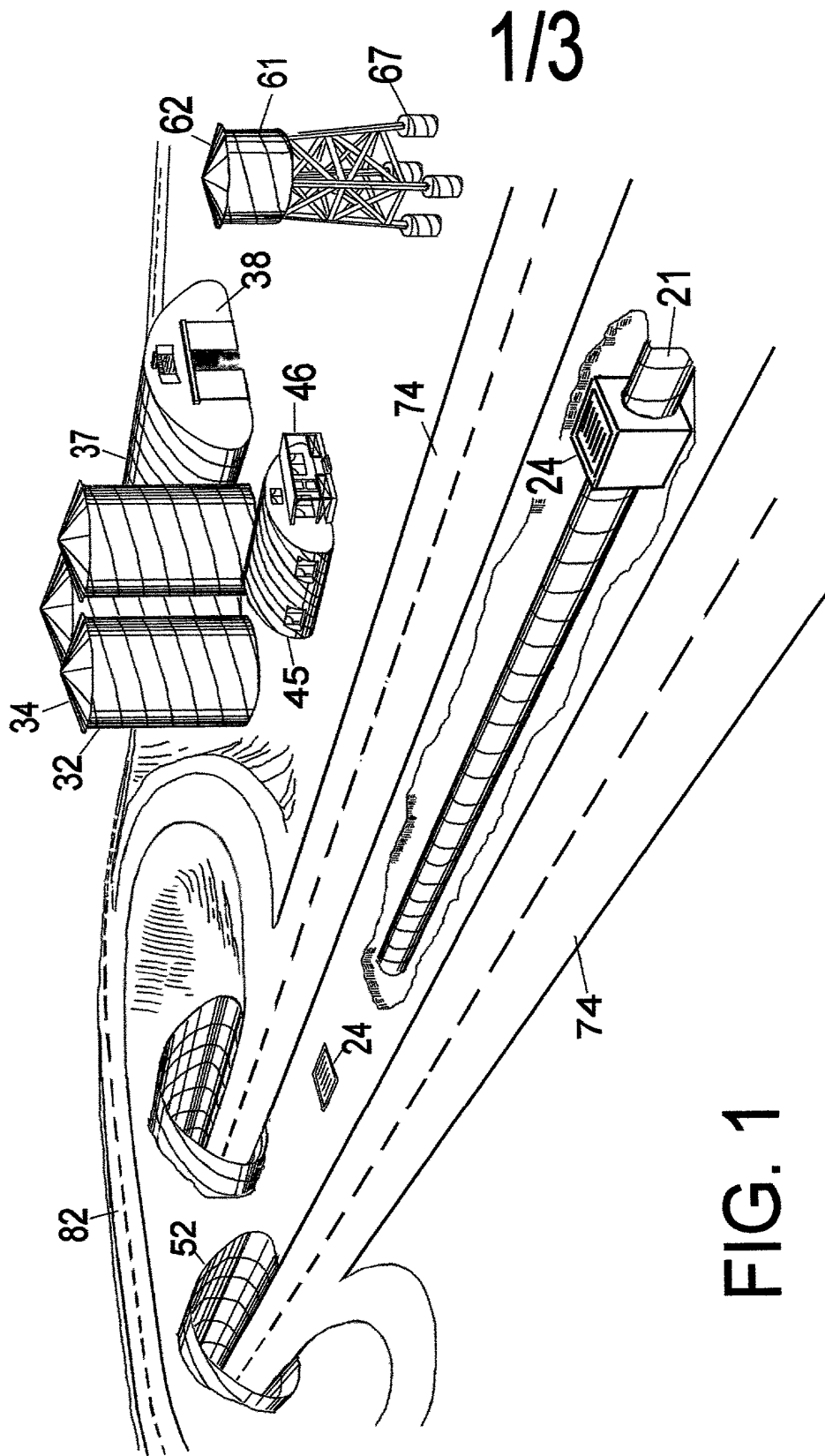


FIG. 1

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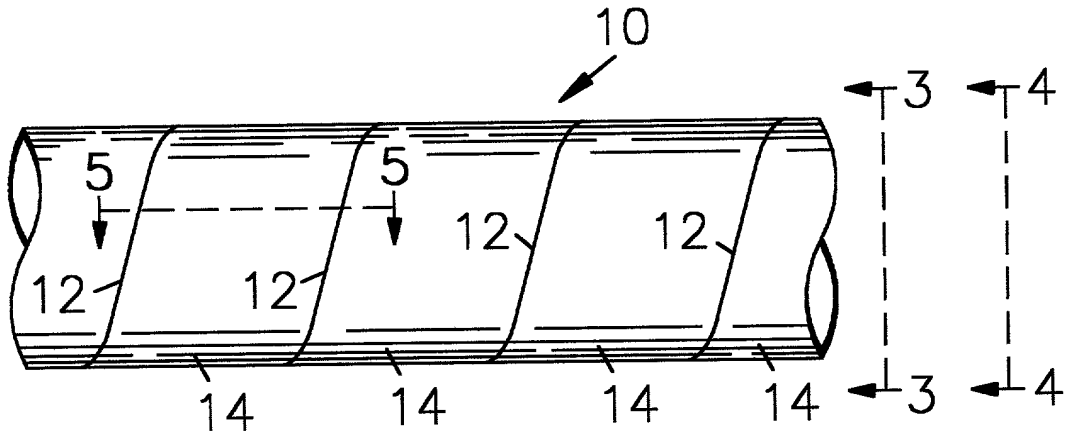


FIG. 2

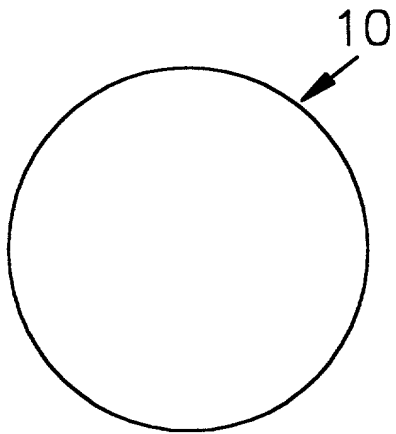


FIG. 3

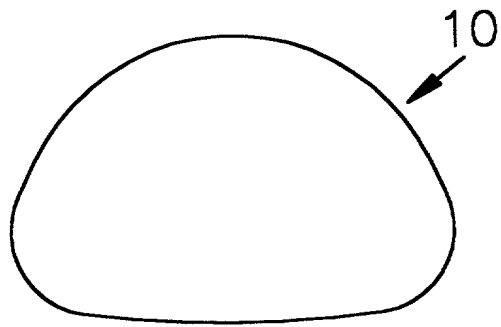


FIG. 4

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3/3

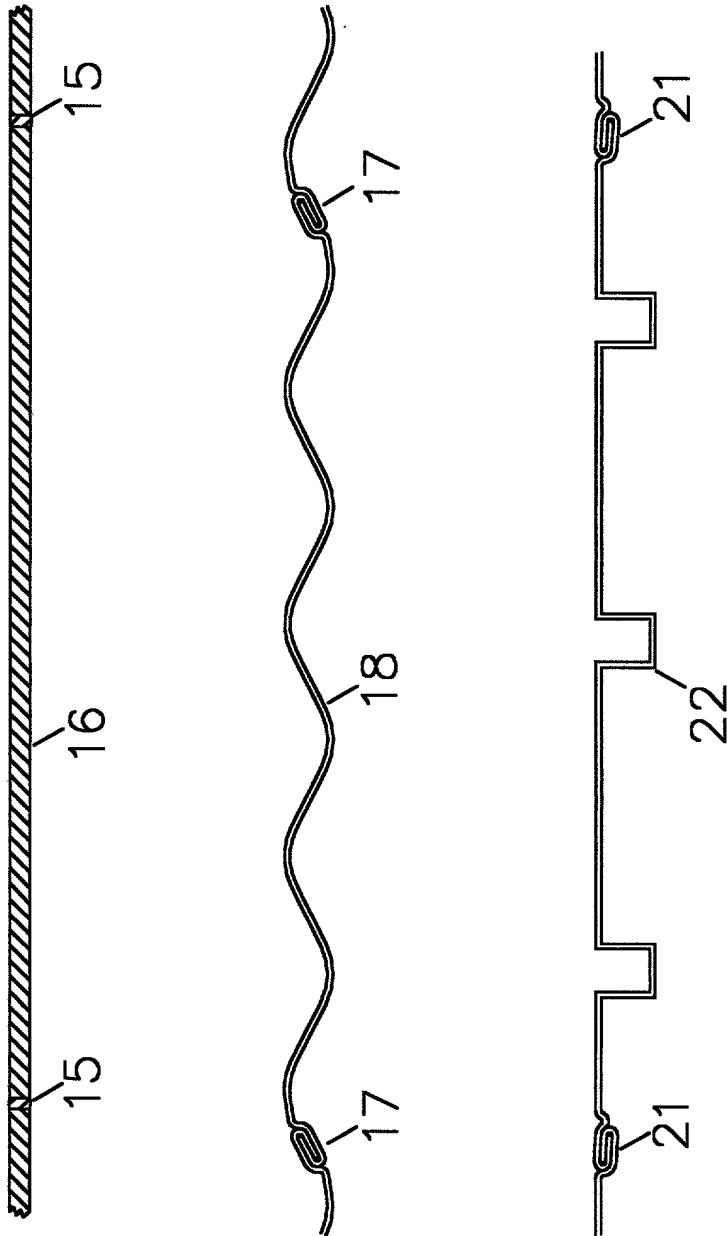


FIG. 5

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	<b>First Named Inventor</b>	Scott E. Johnston
	<b>COMPLETE IF KNOWN</b>	
	<b>Application Number</b>	/
	<b>Filing Date</b>	
	<b>Group Art Unit</b>	
	<b>Examiner Name</b>	

**As a below named inventor, I hereby declare that:**

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**LARGE DIAMETER SPIRALLY FORMED PIPE**

the specification of which *(Title of the Invention)*

☒ is attached hereto  
OR  
☐ was filed on (MM/DD/YYYY)  as United States Application Number or PCT International Application Number  and was amended on (MM/DD/YYYY)  (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

Application Number(s)	Filing Date (MM/DD/YYYY)
60/085,778	05/18/1998

☐ Additional provisional application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

[Page 1 of 2]

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## DECLARATION — Utility or Design Patent Application

I hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

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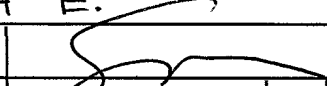
☐ Additional registered practitioner(s) named on supplemental Registered Practitioner Information sheet PTO/SB/02C attached hereto.

Direct all correspondence to: ☒ Customer Number  or Bar Code Label OR ☒ Correspondence address below

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Country	USA	Telephone	530-527-4000	Fax	530-527-4000

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of Sole or First Inventor: ☐ A petition has been filed for this unsigned inventor

Given Name (first and middle [if any])		Family Name or Surname					
Scott E.		Johnston					
Inventor's Signature				Date	5-17-99		
Residence: City	Cottonwood	State	CA	Country	USA	Citizenship	USA
Post Office Address	16857 Hummingbird lane						
Post Office Address							
City	Cottonwood	State	CA	ZIP	96022	Country	USA

☐ Additional inventors are being named on the \_\_\_\_\_ supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto